

REMARKS

The Examiner has rejected claims 1-22 under 35 USC 103(a) as being unpatentable over Watanabe. This is respectfully traversed.

Watanabe teaches asymmetric hydroformylation of vinyl acetate. It explicitly teaches reduction and hydrolysis of 2-acetoxypromanal to produce 1,2-propanediol. It teaches that the reaction depends essentially on the DIOP/rhodium ratio. It does not teach nor suggest a process for preparing 1,3 propane diols.

The Examiner admits that the Watanabe fails to explicitly teach the extracting and recycling requirements of the claims. The Examiner states that these aspects of chemical synthesis are well within the motivation of those of ordinary skill for the purposes of optimizing the yield and efficiency of the process, and are thus, prima facie obvious. Applicants respectfully disagree.

As stated above Watanabe teaches that the reaction depends essentially on the DIOP/rhodium ratio and other reaction variables (temperatures and pressures of hydrogen and carbon monoxide) have minor effects. In addition, Watanabe does not disclose nor suggest at least steps (b), (c) and (d) of claim 1.

Furthermore, as stated on page 3 of the specification, "Watanabe could get only 2-acetoxypromanal with rhodium catalyst and the hydrogenation and hydrolysis is carried out with hazardous reagents. To the best of our knowledge there is no report on simultaneous production of both 1,2 and 1,3-PDO through VAM hydroformylation and catalytic hydrogenation and hydrolysis."

The process of this invention relates to a process for preparation of dioxy-functionalized propane compounds (mixture of 1, 3 and 1,2 propane diols). Furthermore, replacing the hazardous reagents of Watanabe with the recyclable catalyst of this invention is not obvious.

One of ordinary skill understands that the end product of a reaction depends not only on the starting material but also on the reagents and reaction condition and thus, one skilled in the art would not obtain the claimed process based on the disclosure of Watanabe.

Lastly, it appears that rather than considering each claim individually, each of claims 1-22 has been considered as a group. For example, Watanabe does not disclose the subject matter of at least claim 16.

Given the differences in the reagents used, the process steps used and the end products (1,2 propanediol vs. end products that are not limited to 1,2-propanediol), claims 1-22 are not obvious over Watanabe and it is respectfully requested that this rejection be withdrawn.

The Examiner has rejected claims 23-97 under 35 USC 103(a) as being unpatentable over Watanabe in view of US patent no. 5,530,150 to Takaya et al. This is respectfully traversed.

Claims 23-97 depend directly or indirectly on claim 1. For the reasons explained above, claims 23-97 are not obvious in view of Watanabe. Furthermore, the combination of Watanabe and Takaya do not make the invention of claims 23-97 obvious.

The Examiner refers to reference example 1 of Takaya. This example teaches preparation of 2-acetoxypionic acid and does not teach preparation of 1,2-propanediol and 1,3 propanediol. Takaya teaches hydroformylation reaction of vinyl acetate using different catalyst precursors and benzene and thus Takaya teaches away from the claimed invention. Furthermore, Takaya does not teach nor suggest at least steps (b), (c) and (d) of claim 1.

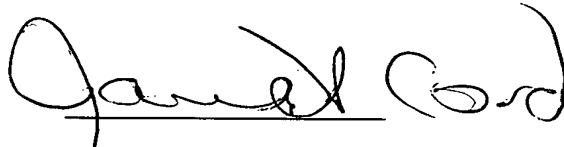
Therefore, for the reasons explained above, there is no combination of these references that makes the claims obvious and it is respectfully requested that this rejection be withdrawn.

Accordingly, it is submitted that this application is in condition for allowance and favorable

consideration is respectfully requested.

It is submitted that the present application is in condition for allowance and favorable consideration is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Janet I. Cord". The signature is written in a cursive style with a horizontal line underneath the name.

JANET I. CORD

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